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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference DOG/VP/BR043517		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IB 03/04557		International filing date (day/month/year) 14.10.2003	Priority date (day/month/year) 24.10.2002
International Patent Classification (IPC) or both national classification and IPC C07C319/18			
Applicant ADISSEO FRANCE SAS et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand 24.02.2004		Date of completion of this report 22.07.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Österle, C Telephone No. +49 89 2399-8120 	

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IB 03/04557

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-10 as originally filed

Claims, Numbers

1-16 as originally filed

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-16
	No: Claims	
Inventive step (IS)	Yes: Claims	1-16
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
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International application No. PCT/IB 03/04557

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- D1: US-A-4 225 516 (BIOLA GEORGES ET AL) 30 September 1980 (1980-09-30)
D2: US-A-2 427 582 (VINTON WILLIAM H) 16 September 1947 (1947-09-16)
D3: US-A-5 696 282 (PORTER HARRY ET AL) 9 December 1997 (1997-12-09)
D4: EP-A-0 601 195 (DAICEL CHEM) 15 June 1994 (1994-06-15)

1. Novelty

Claimed is a process for producing 3-methylthiopropional, characterised by using a N-alkyl morpholine compound as catalyst in the reaction of methyl mercaptan with acrolein.

D1 discloses the same reaction using NEt₃, HMTA as well as pyridine as catalysts.

D2 discloses an analogous reaction, wherein ethanethioic acid is used instead of methyl mercaptane and piperidine is used as catalyst.

D3 discloses the same reaction using pyridine derivatives as catalyst.

D4 discloses the same reaction and suggests using pyridine, piperidine or NEt₃ as well as other catalyst such as copper salts. Examples in D4 use copper acetate as catalyst.

The subject-matter of claims 1-16 then is novel (Article 33(2) PCT).

2. Inventive Activity

None of D1-D4 suggests using a N-alkyl morpholine catalysts. Furthermore, several comparative examples in the description (Tables I and II) show clearly that the use of the catalyst according to the invention improves the quality of the products due less high molecular oligomers formed in the reaction.

The subject-matter of claims 1-16 then is also inventive (Article 33(3) PCT).

3. Industrial Applicability

The subject-matter of claims 1-16 then is considered industrially applicable (Article 33(4) PCT).